

FIGURE 1

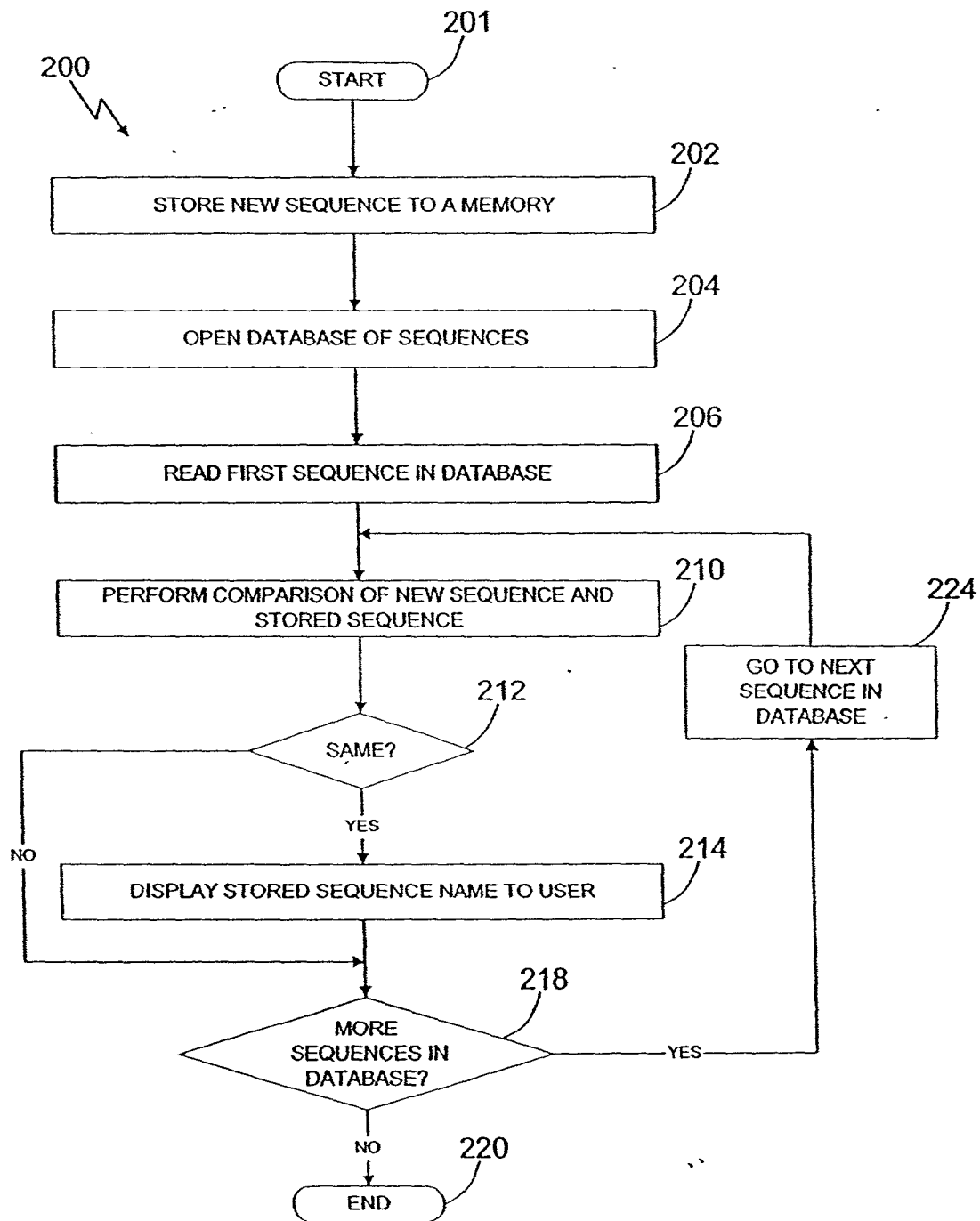


FIGURE 2

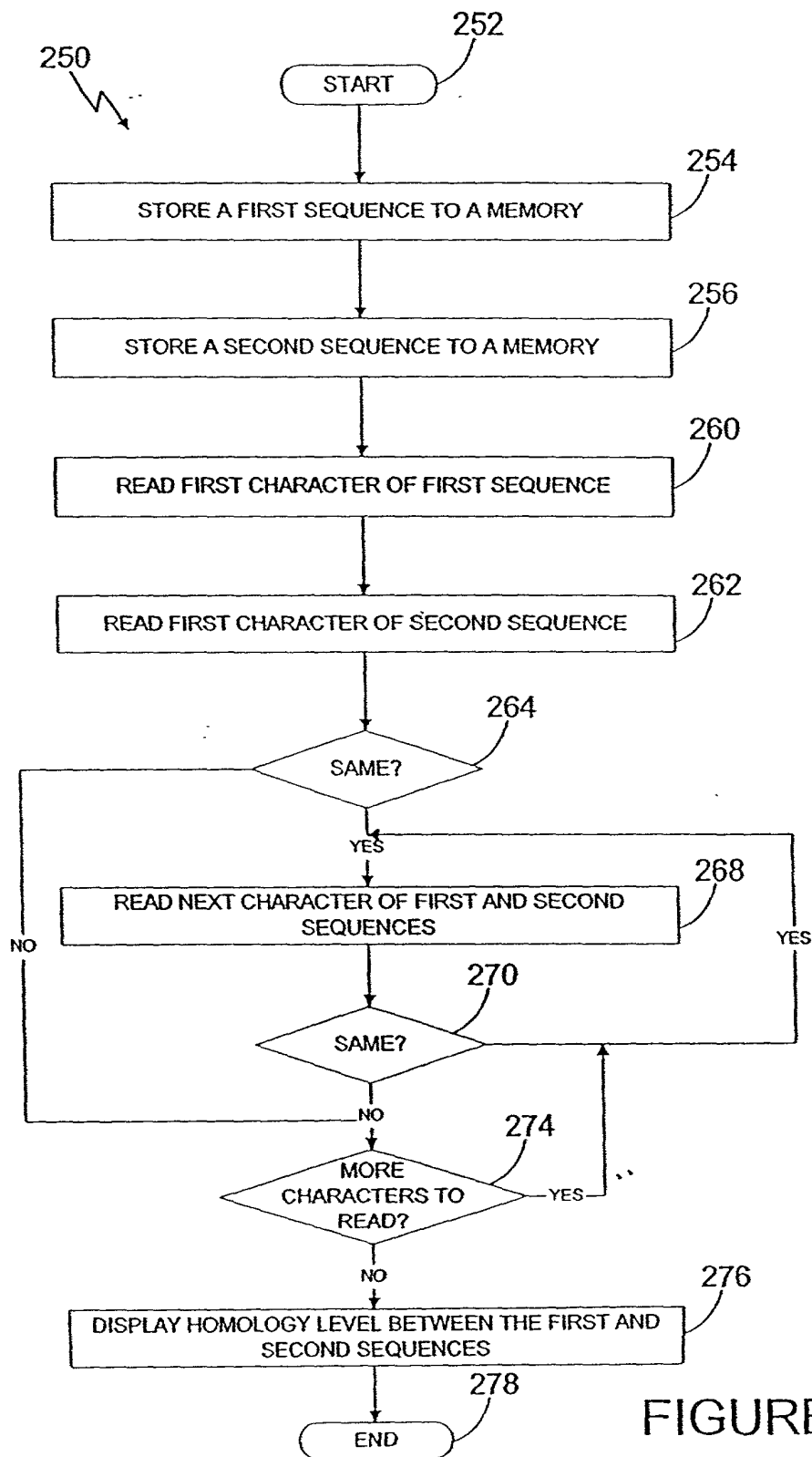


FIGURE 3

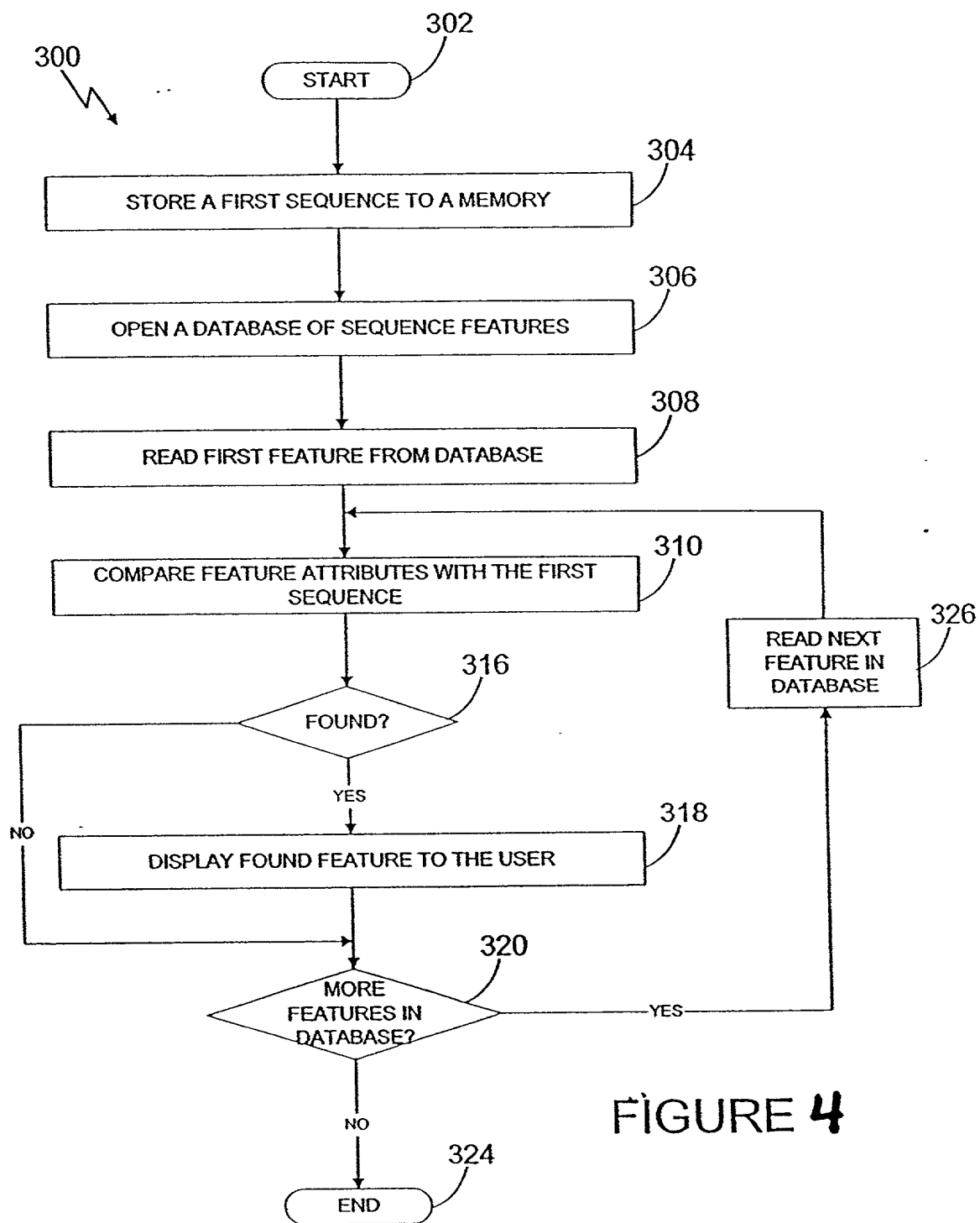


FIGURE 4

FIG. 5
Staphylothermus Marinus - F1-12LC

1	ATG TCT TTA AAC AAG CAC TCT TGG ATG CAT ATG ATA ATA TTT ATT CTC AGC TTT TCT TTC	60
1	Met Ser Leu Asn Lys His Ser Trp Met Asp Met Ile Ile Phe Ile Leu Ser Phe Ser Phe	20
6	61 CCA TTA ACA ATG ATC GCA TTA GCT ATC TCT ATG TCG TCA TGG TTT AAT ATA TGG AAT AAT	120
2	21 Pro Leu Thr Met Ile Ala Leu Ala Ile Ser Met Ser Ser Trp Phe Asn Ile Trp Asn Asn	40
12	121 GCA TTA AGC GAT CTA GGA CAT GCT GTT AAA AGC AGT GTT GCT CCA ATA TTC AAT CTA GGT	180
4	41 Ala Leu Ser Asp Leu Gly His Ala Val Lys Ser Ser Val Ala Pro Ile Phe Asn Leu Gly	60
18	181 CCT GCA ATT GGT GGG ATA CTA ATT GTT ATA GGT TTA AGA AAT CTT TAT TCG TGG AGT	240
6	61 Leu Ala Ile Gly Gly Ile Leu Ile Val Ile Val Gly Leu Arg Asn Leu Tyr Ser Trp Ser	80
24	241 AGA GTT AAA GGA TCT TTA ATC ATA TCC ATG GGT GTA TTT CTT AAC TTA ATA GGG GTT TTC	300
8	81 Arg Val Lys Gly Ser Leu Ile Ile Ser Met Gly Val Phe Leu Asn Leu Ile Gly Val Phe	100
30	301 GAC GAA GTA TAT GGT TGG ATA CAT TTC CTA GTC TCA GTA TTG TTT TTC TTA TCA ATA ATA	360
10	101 Asp Glu Val Tyr Gly Trp Ile His Phe Leu Val Ser Val Leu Phe Phe Leu Ser Ile Ile	120
36	361 GCA TAT TTC ATA GCT ATA TCA ATA CTT GAC AAA TCA TGG ATA GCT GTT CTA CTA ATA ATA	420
12	121 Ala Tyr Phe Ile Ala Ile Ser Ile Leu Asp Lys Ser Trp Ile Ala Val Leu Leu Ile Ile	140
42	421 GGT CAT ATT GCA ATG TGG TAT CTA CAC TTT GCT TCA GAG ATT CCG AGA GGT GCG GCT ATT	480
14	141 Gly His Ile Ala Met Trp Tyr Leu His Phe Ala Ser Glu Ile Pro Arg Gly Ala Ala Ile	160
48	481 CCC GAG TTA TTA GCG GTA TTC TCG TTT TTA CCA TTC TAT ATA AGA GAC TAT TTT AAA TCA	540
16	161 Pro Glu Leu Leu Ala Val Phe Ser Phe Leu Pro Phe Tyr Ile Arg Asp Tyr Phe Lys Ser	180
54	541 TAC ACT AAA CGA TAG	555
18	181 Tyr Thr Lys Arg End	185

FIG. 6A
***Pyrodicticum* - TAG11-17LC**

1	ATG	AAA	CTC	CTT	GAG	CCC	ACA	AAT	ACC	TCC	TAC	ACG	CTG	TTA	CAG	GAT	TTA	GCA	TTG	CAT	60
1	Met	Lys	Leu	Leu	Glu	Pro	Thr	Asn	Thr	Ser	Tyr	Thr	Leu	Leu	Gln	Asp	Leu	Ala	Leu	His	20
61	TTT	GCA	TTT	TAC	TGG	TTT	CTG	GCC	GTG	TAT	ACG	TGG	TTA	CCC	GGT	GTC	CTA	GTC	CGG	GGC	120
21	Phe	Ala	Phe	Tyr	Trp	Phe	Leu	Ala	Val	Tyr	Thr	Trp	Leu	Pro	Gly	Val	Leu	Val	Arg	Gly	40
121	GTA	GCT	GTG	GAC	ACA	GGG	GTG	GCT	CGG	GTG	CCT	GGG	CTC	GGC	CGG	CGC	GGT	AAG	AGG	CTG	180
41	Val	Ala	Val	Asp	Thr	Gly	Val	Ala	Arg	Val	Pro	Gly	Leu	Gly	Arg	Arg	Gly	Lys	Arg	Leu	60
181	CTC	CTG	GCC	GCT	GTG	GCT	GTC	TTG	GCG	CTT	GTT	GTG	TCC	GTT	GTT	GTC	CCG	GCT	TAT	GTG	240
61	Leu	Leu	Ala	Ala	Val	Ala	Val	Ala	Leu	Val	Val	Val	Val	Ser	Val	Val	Pro	Ala	Tyr	Val	80
241	GCG	TAT	AGT	AGT	CTG	CAC	CCG	GAG	AGC	TGT	CGG	CCC	GTT	GCG	CCG	GAG	GGG	CTC	ACC	TAC	300
81	Ala	Tyr	Ser	Ser	Leu	His	Pro	Glu	Ser	Cys	Arg	Pro	Val	Ala	Pro	Glu	Gly	Leu	Thr	Tyr	100
301	AAA	GAG	TTC	AGC	GTG	ACC	GCG	GAG	GAT	GGC	TTG	GTG	GTT	CGG	GGC	TGG	GTG	CTG	GGC	CCC	360
101	Lys	Glu	Phe	Ser	Val	Thr	Ala	Glu	Asp	Gly	Leu	Val	Val	Arg	Gly	Trp	Val	Leu	Gly	Pro	120
361	GGC	GCT	GGG	GGC	AAC	CCG	GTG	TTC	GTT	TTG	ATG	CAC	GGG	TAT	ACT	GGG	TGC	CGC	TCG	GCG	420
121	Gly	Ala	Gly	Gly	Asn	Pro	Val	Phe	Val	Leu	Met	His	Gly	Tyr	Thr	Gly	Cys	Arg	Ser	Ala	140
421	CCC	TAC	ATG	GCT	GTG	CTG	GCC	CGG	GAG	CTC	GTG	GAG	TGG	GGG	TAC	CCG	GTG	GTT	GTG	TTC	480
141	Pro	Tyr	Met	Ala	Val	Leu	Ala	Arg	Glu	Leu	Val	Glu	Trp	Gly	Tyr	Pro	Val	Val	Val	Phe	160
481	GAC	TTC	CGG	GGC	CAC	GGG	GAG	AGC	GGG	GGC	TCC	ACG	ACG	ATT	GGG	CCC	CGG	GAG	GTG	CTG	540
161	Asp	Phe	Arg	Gly	His	Gly	Glu	Ser	Gly	Gly	Ser	Thr	Thr	Thr	Ile	Gly	Pro	Arg	Glu	Val	180
541	GAT	GCC	CGG	GCT	GTG	GTG	GGC	TAT	GTC	TCC	GAG	CCG	TTC	CCC	GGC	CGC	CGG	ATA	ATA	TTC	600
181	Asp	Ala	Arg	Ala	Val	Val	Gly	Tyr	Val	Ser	Glu	Arg	Phe	Pro	Gly	Arg	Arg	Ile	Ile	Leu	200

FIG. 6B

601	GTG GGG TTC AGT ATG GGC GGC GCT GTA CGC ATC GTG GAG CGT GCT GGG GAC CCG CGG GTC	660
201	Val Gly Phe Ser Met Gly Gly Ala Val Ala Ile Val Glu Gly Ala Gly Asp Pro Arg Val	220
661	TAC GCG GTG GCT GCT GAT AGC CCG TAC TAT AGG CTC CCG GAC GTC ATA CCC CCG TGG CTG	720
221	Tyr Ala Val Ala Ala Asp Ser Pro Tyr Tyr Arg Leu Arg Asp Val Ile Pro Arg Trp Leu	240
721	GAG TAC AAG ACG CCG CTG CCG GGC TGG GTG GGT GTG CTG GCC GGG TTC TAC GGG AGG CTG	780
241	Glu Tyr Lys Thr Pro Leu Pro Gly Trp Val Gly Val Leu Ala Gly Phe Tyr Gly Arg Leu	260
781	ATG GCG GGC GTT GAC CTC GGC TTC GGC CCC GCT GGG GTG GAG CGC GTG GAT AAG CCG TTG	840
261	Met Ala Gly Val Asp Leu Gly Phe Gly Pro Ala Gly Val Glu Arg Val Asp Lys Pro Leu	280
841	CTG GTG GTG TAT GGG CCC CCG GAC CCG CTG GTG ACG CCG GAC GAG CGC AGG AGC CTG GCG	900
281	Leu Val Val Tyr Gly Pro Arg Asp Pro Leu Val Thr Arg Asp Glu Ala Arg Ser Leu Ala	300
901	TCC CGT AGC CCG TGT GGC CGT CTC GTC GAG GTT CCT GGG GCT GGC CAC GTG GAG GCC GTG	960
301	Ser Arg Ser Pro Cys Gly Arg Leu Val Glu Val Pro Gly Ala Gly His Val Glu Ala Val	320
961	GAT GTG CTC GGG CCG GGC CGC TAC GCA GAC ATG CTG ATA GAG CTG CCG CAC GAG GAG TGC	1020
321	Asp Val Leu Gly Pro Gly Arg Tyr Ala Asp Met Leu Ile Glu Leu Ala His Glu Glu Cys	340
1021	CCT CCG GGC GGC GGT GGC TGA	1041
341	Pro Pro Gly Ala Gly Gly End	347

FIG. 7A

Archaeoglobus Venificus SN P6-24LC

1 ATGCCA TAT GTT AGG AAT GGT GGT GTA AAT ATC TAT TAT GAA CTG GTG GAT GCA CCT GAG 60
1 Met Pro Tyr Val Arg Asn Gly Gly Val Asn Ile Tyr Tyr Glu Leu Val Asp Gly Pro Glu 20
61 CCA CCA ATT GTC TTT GTT CAC GGA TGG ACA GCA AAT ATG AAT TTT TGG AAA GAG CAA AGA 120
21 Pro Pro Ile Val Phe Val His Gly Trp Thr Ala Asn Met Asn Phe Trp Lys Glu Gln Arg 40
121 CGT TAT TTT GCA GGC AGG AAT ATG ATG TTG TTT GTC GAT AAC AGA GGT CAG GGC AGG TCC 180
41 Arg Tyr Phe Ala Gly Arg Asn Met Met Leu Phe Val Asp Asn Arg Gly His Gly Arg Ser 60
181 GAT AAG CCA CTT GGA TAC GAT TTC TAC AGA TTT GAG AAC TTC ATT TCA GAT TTA GAT GCG 240
61 Asp Lys Pro Leu Gly Tyr Asp Phe Tyr Arg Phe Glu Asn Phe Ile Ser Asp Leu Asp Ala 80
241 GTT GTT AGG GAG ACT GGA GTG GAG AAA TTT GTT CTC GTC GGA CAT TCA TTC GGA ACA ATG 300
81 Val Val Arg Glu Thr Gly Val Glu Lys Phe Val Leu Val Gly His Ser Phe Gly Thr Met 100
301 ATC TCT ATG AAG TAC TGT TCG GAG TAT CCG AAT CCG GTT CTT GCT CTA ATC CTC ATA GGT 360
101 Ile Ser Met Lys Tyr Cys Ser Glu Tyr Arg Asn Arg Val Leu Ala Leu Ile Leu Ile Gly 120
361 GGT GGC AGC AGA ATA AAG CTT CTA CAC AGA ATT GGA TAT CCT TTA GCA AAG ATT CTT GCA 420
121 Gly Gly Ser Arg Ile Lys Leu Lys Leu His Arg Ile Gly Tyr Pro Leu Ala Lys Ile Leu Ala 140
421 TCC ATT GCA TAC AAG AAG TCT TCA AGA TTG GTC GCA GAT CTT TCC TTT GGC AAA AAT GCT 480
141 Ser Ile Ala Tyr Lys Lys Ser Ser Arg Leu Val Ala Asp Leu Ser Phe Gly Lys Asn Ala 160
481 GGT GAA CTT AAA GAG TGG GGA TGG AAA CAG GCA ATG GAT TAT ACA CCC TCC TAC GTG GCA 540
161 Gly Glu Leu Lys Glu Trp Gly Trp Lys Lys Gln Ala Met Asp Tyr Thr Pro Ser Tyr Val Ala 160
541 ATG TAC ACG TAC AGA ACT CTA ACG AAA GTG AAT CTT GAA AAT ATC TTG GAG AAA ATA GAC 600
181 Met Tyr Thr Tyr Arg Thr Leu Thr Lys Val Asn Leu Glu Asn Ile Leu Glu Lys Ile Asp 200
601 TGT CCA ACA CTG ATT ATC GTT GGA GAA GAG GAT GCA CTA TTG CCC GTT AGC AAA TCA GTT 660
201 Cys Pro Thr Leu Ile Ile Val Gly Glu Glu Asp Ala Leu Leu Pro Val Ser Lys Ser Val 220

FIG. 7B
***Archaeoglobus Venificus* SN P6-24LC**

661	GAG CTG ACG AGG AGG ATA GAA AAC TCA AAG CTT GTG ATC ATC CCA AAC TCG GGG CAT TGC	720
221	Glu Leu Ser Arg Arg Ile Glu Asn Ser Lys Leu Val Ile Ile Pro Asn Ser Gly His Cys	240
721	GTA ATG CTT GAG AGT CCA AGT GAG GTT AAT AGA GCA ATG GAC GAA TTC ATT TCT TCA GCA	780
241	Val Met Leu Glu Ser Pro Ser Glu Val Asn Arg Ala Met Asp Glu Phe Ile Ser Ser Ala	260
781	CAG TTC TAA	789
261	Gln Phe End	263

FIG. 8
***Aquifax pyrophilus* - 28LC**

1 TTG AGA TTG AGG AAA TTT GAA GAG ATA AAC CTC GTT CTT TCG GGA GGA GCT GCA AAG GGC 60
 1 Leu Arg Leu Arg Lys Phe Glu Glu Ile Asn Leu Val Leu Ser Gly Gly Ala Ala Lys Gly 20
 61 ATA GCC CAC ATA GGT GTT TTG AAA GCT ATA AAC GAG CTC GGT ATA AGG GTG AGG GCT TTA 120
 21 Ile Ala His Ile Gly Val Leu Lys Ala Ile Asn Glu Leu Gly Ile Arg Val Arg Ala Leu 40
 121 AGC GGG GTG AGC GCC GGG GCA ATC GTT TCG GTC TTT TAT GCC TCA GGC TAC TCC CCT GAA 180
 41 Ser Gly Val Ser Ala Gly Ala Ile Val Ser Val Phe Tyr Ala Ser Gly Tyr Ser Pro Glu 60
 181 GGG ATG TTC AGC CTT CTG AAG AGG GTA AAC TGG CTG AAG CTG TTT AAG TTC AAG CCA CCT 240
 61 Gly Met Phe Ser Leu Leu Lys Arg Val Asn Trp Leu Lys Leu Phe Lys Phe Lys Pro Pro 80
 241 CTG AAG CGA TTG ATA GGG TGG GAG AAG GCT ATA AGA TTC CTT GAG GAA GTT CTC CCT TAC 300
 81 Leu Lys Gly Leu Ile Gly Trp Glu Lys Ala Ile Arg Phe Leu Glu Glu Val Leu Pro Tyr 100
 301 AGG AGA ATA GAA AAA CTT GAG ATA CCG ACG TAT ATA TGC GCG ACG GAT TTA TAC TCG CGA 360
 101 Arg Arg Ile Glu Lys Leu Glu Ile Pro Thr Tyr Ile Cys Ala Thr Asp Leu Tyr Ser Gly 120
 361 AGG GCT CTA TAC CTC TCG GAA GGG AGT TTA ATC CCC GCA CTT CTC GGC AGC TGT GCA ATT 420
 121 Arg Ala Leu Tyr Leu Ser Glu Gly Ser Leu Ile Pro Ala Leu Leu Gly Ser Cys Ala Ile 140
 421 CCC GGC ATA TTT GAA CCC GTT GAG TAT AAG AAT TAC TTG CTC GTT GAC GGA GGT ATA GTT 480
 141 Pro Gly Ile Phe Glu Pro Val Gly Tyr Lys Asn Tyr Leu Leu Val Asp Gly Gly Ile Val 160
 481 AAC AAC CTT CCC GTT GAG CCC TTT CAG GAA AGC GGT ATT CCC ACC GTT TGC GTT GAT GTC 540
 161 Asn Asn Leu Pro Val Glu Pro Phe Glu Ser Gly Ile Pro Thr Val Cys Val Asp Val 180
 541 CTT CCC ATA GAG CCG GAA AAG GAT ATA AAG AAC ATT CTT CAC ATC CTT TTG AGG AGC TTC 600
 181 Leu Pro Ile Glu Pro Glu Lys Asp Ile Lys Asn Ile Leu His Ile Leu Leu Arg Ser Phe 200
 601 TTT CTT GCG GTC CGC TCA AAC TCC GAA AAG AGA AAG GAG TTT TGT GAC CTC GTT ATA GTT 660
 201 Phe Leu Ala Val Arg Ser Asn Ser Glu Lys Arg Lys Glu Phe Cys Asp Leu Val Ile Val 220
 661 CCT GAG CTT GAG GAG TTC ACA CCC CTT GAT GTT AGA AAA GCG GAC CAA ATA ATG GAG AGG 720
 221 Pro Glu Leu Glu Glu Phe Thr Pro Leu Asp Val Arg Lys Ala Asp Gln Ile Met Glu Arg 240
 721 GGA TAC ATA AAG GCC TTA GAG GTA CTT TCT GAA TAG 756
 241 Gly Tyr Ile Lys Ala Leu Glu Val Leu Ser Glu End 252

FIG. 9A
M11TL-29L

1 ATG TTT AAT ATC AAT GTC TTT GTT AAT ATA TCT TGG CTG TAT TTT TCA GGG ATA GTT ATG 60
1 Met Phe Asn Ile Asn Val Phe Val Asn Ile Ser Trp Leu Tyr Phe Ser Gly Ile Val Met 20

61 AAG ACT GTG GAA GAG TAT GCG CTA CTT GAA ACA GGC GTA AGA GTG TTT TAT CGG TGT GTA 120
21 Lys Thr Val Glu Glu Tyr Ala Leu Leu Glu Thr Gly Val Arg Val Phe Tyr Arg Cys Val 40

121 ATC CCG GAG AAA GCT TTT AAC ACT TTG ATA ATA GGT TCA CAC GGA TTG GGG GCG CAC AGT 180
41 Ile Pro Glu Lys Ala Phe Asn Thr Leu Ile Ile Gly Ser His Gly Leu Gly Ala His Ser 60

181 GGA ATC TAC ATT AGT GTT GCT GAA GAA TTT GCT AGG CAC GGA TTT GGA TTC TGC ATG CAC 240
61 Gly Ile Tyr Ile Ser Val Ala Glu Glu Phe Ala Arg His Gly Phe Gly Phe Cys Met His 80

241 GAT CAA AGG GGA CAT GGG AGA ACG GCA AGC GAT AGA GAA AGA GGG TAT GTG GAG GGC TTT 300
81 Asp Gln Arg Gly His Gly Arg Thr Ala Ser Asp Arg Glu Arg Gly Tyr Val Glu Gly Phe 100

301 CAC AAC TTC ATA GAG GAT ATG AAG GCC TTC TCC GAT TAT GCC AAG TGG CGC GTG GGA GGT 360
101 His Asn Phe Ile Glu Asp Met Lys Ala Phe Ser Asp Tyr Ala Lys Trp Arg Val Gly Gly 120

361 GAC GAA ATA ATA TTG CTA GGA CAC AGT ATG GGC GGG CTG ATA GCG CTC TTA ACA GTT GCA 420
121 Asp Glu Ile Ile Leu Leu Gly His Ser Met Gly Gly Leu Ile Ala Leu Leu Thr Val Ala 140

421 ACT TAT AAA GAA ATC GCC AAG GGA GTT ATC GCG CTA GCC CCG GCC CTC CAA ATC CCC TTA 480
141 Thr Tyr Lys Lys Glu Ile Ala Lys Gly Val Ile Ala Leu Ala Pro Ala Leu Gln Ile Pro Leu 160

481 ACC CCG GCT AGA AGA CTT GTT CTA AGC CTC GCG TCA AGG CTT GCC CCG CAT TCT AAG ATC 540
161 Thr Leu Gln Arg Arg Leu Val Leu Ser Leu Ala Ser Arg Leu Ala Pro His Ser Lys Ile 180

541 ACC TTA CAA AGG AGA TTG CCG CAG AAA CCA GAG GGT TTT CAA AGA GCA AAA GAT ATA GAA 600
181 Thr Leu Gln Arg Arg Leu Pro Gly Lys Pro Gly Lys Phe Gln Arg Ala Lys Asp Ile Glu 200

601 TAC AGT CTG AGT GAA ATA TCA GTC AAG CTC GTG GAC GAA ATG ATT AAA GCA TCA TCT ATG 660
201 Tyr Ser Leu Ser Glu Ile Ser Val Lys Leu Val Asp Glu Met Ile Lys Ala Ser Ser Met 220

661 TTG TGG ACC ATA GCA GGG GAA ATT AAT ACT CCC GTC CTG CTT ATT CAT GGG GAA AAA GAC 720
221 Phe Trp Thr Ile Ala Gly Glu Ile Asn Thr Pro Val Leu Leu Ile Lys Ala Ser Ser Met 240

FIG. 7 B
M117L-29L.

721	AAT GTC ATA CCT CCG GAG GCG AGC AAA AAA GCC TAC CAA TTA ATA CCT TCA TTC CCT AAA	780
241	Asn Val Ile Pro Pro Glu Ala Ser Lys Lys Ala Tyr Gln Leu Ile Pro Ser Phe Pro Lys	
781	GAG TTG AAA ATA TAC CCC GAT CTT GGA CAC AAC TTG TTT TTT GAA CCA GGC GCG GTG AAA	840
261	Glu Leu Lys Ile Tyr Pro Asp Leu Gly His Asn Leu Phe Phe Glu Pro Gly Ala Val Lys	280
841	ATC GTC ACA GAC ATT GTA GAG TGG GTT AAG AAT CTA CCC AGG GAA AAT CCT TAA	894
281	Ile Val Thr Asp Ile Val Glu Trp Val Lys Asn Leu Pro Arg Glu Asn Pro End	298

FIG. 10A
***Thermococcus* CL-2-30LC**

1 ATG GAG GTT TAC AAG GCC AAA TTC GGC GAA GCA AAG CTC GGC TGG GTC GTT CTG GTT CAT 60
1 Met Glu Val Tyr Lys Ala Lys Phe Gly Glu Ala Lys Leu Gly Trp Val Val Leu Val His 20
61 GGC CTC GGC GAG CAC AGC GGA AGG TAT GGA AGA CTG ATT AAG GAA CTC AAC TAT GCC GGC 120
21 Gly Leu Gly Glu His Ser Gly Arg Tyr Gly Arg Leu Ile Lys Glu Leu Asn Tyr Ala Gly 40
121 TTT GGA GTT TAC ACC TTC GAC TGG CCC GGC CAC GGG AAG AGC CCG GGC AAG AGA GGG CAC 180
41 Phe Gly Val Tyr Thr Phe Asp Trp Pro Gly His Gly Lys Ser Pro Gly Lys Arg Gly His 60
181 ACG AGC GTC GAG GAG GCG ATG GAA ATC ATC GAC TCG ATA ATC GAG GAG ATC AGG GAG AAG 240
61 Thr Ser Val Glu Glu Ala Met Glu Ile Ile Asp Ser Ile Ile Glu Glu Ile Arg Glu Lys 80
241 CCC TTC CTC TTC GGC CAC AGC CTC GGT GGT CTA ACT GTC ATC AGG TAC GCT GAG ACG CGG 300
81 Pro Phe Leu Phe Gly His Ser Leu Gly Gly Leu Thr Val Ile Arg Tyr Ala Glu Thr Arg 100
301 CCC GAT AAA ATA CCG GGA TTA ATA GCT TCC TCG CCT GCC CTC GCC AAG AGC CCG GAA ACG 360
101 Pro Asp Lys Ile Arg Gly Leu Ile Ala Ser Ser Pro Ala Leu Ala Lys Ser Pro Glu Thr 120
361 CCG GGC TTC ATG GTG GCC CTC GCG AAG TTC CTT GGA AAG ATC GCC CCG GGA GTT GTT CTC 420
121 Pro Gly Phe Met Val Ala Leu Ala Lys Phe Leu Gly Lys Ile Ala Pro Gly Val Val Leu 140
421 TCC AAC GGC ATA AAG CCG GAA CTC CTC TCG AGG AAC AGG GAC GCC GTG AGG AGG TAC GTT 480
141 Ser Asn Gly Ile Lys Pro Glu Leu Leu Ser Arg Asn Arg Asp Ala Val Arg Arg Tyr Val 160
481 GAA GAC CCA CTC GTC CAC GAC AGG ATT TCG GCC AAG CTG GGA AGG AGC ATC TTC GTG AAC 540
161 Glu Asp Pro Leu Val Val His Asp Arg Ile Ser Ala Lys Leu Gly Arg Ser Ile Phe Val Asn 180
541 ATG GAG CTG GCC CAC AGG GAG GCG GAC AAG ATA AAA GTC CCG ATC CTC CTT CTG ATG GGC 600
181 Met Glu Leu Ala His Arg Glu Ala Asp Lys Ile Lys Val Pro Ile Leu Leu Ile Gly 200
601 ACT GGC GAT GTA ATA ACC CCG CCT GAA GGC TCA CGC AGA CTC TTC GAG GAG CTG GCC GTC 660
201 Thr Gly Asp Val Ile Thr Pro Pro Glu Gly Ser Arg Arg Leu Phe Glu Glu Leu Ala Val 220
661 GAG AAC AAA ACC CTG AGG GAG TTC GAG GGG GCG TAC CAC GAG ATA TTT GAA GAC CCC GAG 720
221 Glu Asn Lys Thr Leu Arg Glu Phe Glu Gly Ala Tyr His Glu Ile Phe Glu Asp Pro Glu 240

FIG. 10B
Thermococcus CL-2-30LC

721 TGG GCC GAG GAG TTC CAC GAA ACA ATT GTT AAG TGG CTG GTT GAA AAA TCG TAC TCT TCG 780
722 Trp Ala Glu Glu Phe His Glu Thr Ile Val Lys Trp Leu Val Glu Lys Ser Tyr Ser Ser 260
781 GCT CAA TAA 789
261 Ala Gln End 263

FIG. 11
Aquifex VF5-34LC

1 TTG ATT GGC AAT TTG AAA TTG AAG AGG TTT GAA GAG GTT AAC TTA GTT CTT TCG GGA GGG 60
1 Leu Ile Gly Asn Leu Lys Leu Lys Arg Phe Glu Glu Val Asn Leu Val Leu Ser Gly Gly 20
61 GCT GCC AAG GGT ATC GCC CAT ATA GGT GTT TTA AAA GCT CTG GAA GAG CTC GGT ATA AAG 120
21 Ala Ala Lys Gly Ile Ala His Ile Gly Val Leu Lys Ala Leu Glu Glu Ile Lys 40
121 GTA AAG AGG CTC AGC GGG GTA AGT GCT GGA GCT ATC GTT TCC GTC TTT TAC GCT TCG GGC 180
41 Val Lys Arg Leu Ser Gly Val Ser Ala Gly Ala Ile Val Ser Val Phe Tyr Ala Ser Gly 60
181 TAC ACT CCC GAC GAG ATG TTA AAA CTC CTG AAA GAG GTA AAC TGG CTC AAA CTT TTT AAG 240
61 Tyr Thr Pro Asp Glu Met Leu Lys Leu Lys Glu Val Asn Trp Leu Lys Leu Phe Lys 80
241 TTC AAA ACA CCG AAA ATG GGC TTA ATG GGG TGG GAG AAG GCT GCA GAG TTT TTG GAA AAA 300
81 Phe Lys Thr Pro Lys Met Gly Leu Met Gly Trp Glu Lys Ala Glu Phe Leu Glu Lys 100
301 GAG CTC GGA GTT AAG AGG CTG GAA GAC CTG AAC ATA CCA ACC TAT CTT TGC TCG GCG GAT 360
101 Glu Leu Gly Val Lys Arg Leu Glu Asp Leu Asn Ile Pro Thr Tyr Leu Cys Ser Ala Asp 120
361 CTG TAC ACG GGA AAG GCT CTT TAC TTC GGC AGA GGT GAC TTA ATT CCC GTG CTT CTC GGA 420
121 Leu Tyr Thr Gly Lys Ala Leu Tyr Phe Gly Arg Gly Asp Leu Ile Pro Val Leu Leu Gly 140
421 AGT TGT TCC ATA CCC GGG ATT TTT GAA CCA GTT GAG TAC GAG AAT TTT CTA CTT GTT GAC 480
141 Ser Cys Ser Ile Pro Gly Ile Phe Glu Pro Val Glu Tyr Glu Asn Phe Leu Leu Val Asp 160
481 GGA GGT ATA GTG AAC AAC CTG CCC GTA GAA CCT TTG GAA AAG TTC AAA GAA CCC ATA ATC 540
161 Gly Gly Ile Val Asn Asn Leu Pro Val Glu Pro Leu Glu Lys Phe Lys Glu Pro Ile Ile 180
541 GGG GTA GAT GTG CTT CCC ATA ACT CAA GAA AGA AAG ATT AAA AAT ATA CTC CAC ATC CTT 600
181 Gly Val Asp Val Leu Pro Ile Thr Gln Glu Arg Lys Ile Lys Asn Ile Leu His Ile Leu 200
601 ATA AGG AGC TTC TTT CTG GCG GTT CGT TCC AAT TCG GAA AAG AGA AAG GAG TTC TGC AAC 660
201 Ile Arg Ser Phe Phe Leu Ala Val Arg Ser Asn Ser Glu Lys Arg Lys Glu Phe Cys Asn 220
661 GTA GTT ATA GAA CCT CCC CTT GAA GAG TTC TCT CCT CTG GAC GTA AAT AAG GCG GAC GAG 720
221 Val Val Ile Glu Pro Pro Leu Glu Glu Phe Ser Pro Leu Asp Val Asn Lys Ala Asp Glu 240
721 ATA TTC TGC GGG GAT ATG AGA GCA CTT TAA 750
241 Ile Phe Cys Gly Asp Met Arg Ala Leu End 250

FIG. 12A
***Teredinibacter* - 42L**

1 ATG CCA GCT AAT GAC TCA CCC ACG ATC GAC TTT AAT CCT CGC GGC ATT CTT CGC AAC GCT 60
1 Met Pro Ala Asn Asp Ser Pro Thr Ile Asp Phe Asn Pro Arg Gly Ile Leu Arg Asn Ala 20
61 CAC GCA CAG GTT ATT TTA GCG ACT TCC GGC TTG CGC AAA GCG TTT TTG AAA CGC ACG CAC 120
21 His Ala Gln Val Ile Leu Ala Thr Ser Gly Leu Arg Lys Ala Phe Leu Lys Arg Thr His 40
121 AAG AGC TAC CTC AGC ACT GCC CAA TGG CTG GAG CTC GAT GCC GGC AAC GGA GTT ACC TTG 180
41 Lys Ser Tyr Leu Ser Thr Ala Gln Trp Leu Glu Leu Asp Ala Gly Asn Gly Val Thr Leu 60
181 GCC GGA GAG CTT AAC ACA GCG CCT GCA ACT GCA TCC TCC TCC CAC CCG GCG CAC AAG AAC 240
61 Ala Gly Glu Leu Asn Thr Ala Pro Ala Thr Ala Ser Ser His Pro Ala His Lys Asn 80
241 ACT CTG GTT ATT GTG CTG CAC GGC TGG GAA GGC TCC AGC CAG TCG GCC TAT GCG ACC TCC 300
81 Thr Leu Val Ile Val Leu His Gly Trp Glu Gly Ser Ser Gln Ser Ala Tyr Ala Thr Ser 100
301 GCT GGC AGC ACG CTT TTC GAC AAT GGG TTC GAC ACT TTT CGC CTT AAT TTT CGC GAT CAC 360
101 Ala Gly Ser Thr Leu Phe Asp Asn Gly Phe Asp Thr Phe Arg Leu Asn Phe Arg Asp His 120
361 GGC GAC ACC TAC CAC TTA AAC CGC GGC ATA TTT AAC TCA TCG CTG ATT GAC GAA GTA GTG 420
121 Gly Asp Thr Tyr His Leu Asn Arg Gly Ile Phe Asn Ser Ser Leu Ile Asp Glu Val Val 140
421 GGC GCA GTC AAA GCC ATC CAG CAG CAA ACC GAC TAC GAC AAG TAT TGC CTG ATG GGG TTC 480
141 Gly Ala Val Lys Ala Ile Gln Gln Thr Asp Tyr Asp Lys Tyr Cys Leu Met Gly Phe 160
481 TCA CTG GGT GGG AAC TTT GCC TTG CCG GTC GCG GTG CCG GAA CAG CAT CTC GCT AAA CCG 540
161 Ser Leu Gly Gly Asn Phe Ala Leu Arg Val Ala Val Arg Glu Gln His Leu Ala Lys Pro 180
541 CTA GCG GGC GTG CTC GCC GTA TGC CCG GTA CTC GAC CCC GCA CAC ACC ATG ATG GCC CTA 600
181 Leu Ala Gly Val Leu Ala Val Cys Pro Val Leu Asp Pro Ala His Thr Met Met Ala Leu 200
601 AAC CGA GGT GCG TTT TTC TAC GGC CCG TAT TTT GCG CAT AAA TGG AAG CGC TCG TTA ACC 660
201 Asn Arg Gly Ala Phe Phe Tyr Gly Arg Tyr Phe Ala His Lys Trp Lys Arg Ser Leu Thr 220
661 GCA AAA CTT GCA GCT TTC CCA GAC TAC AAA TAC GGC AAA CAT TTA AAA TCG ATA CAC ACG 720
221 Ala Lys Leu Ala Ala Phe Pro Asp Tyr Lys Tyr Gly Lys Asp Leu Lys Ser Ile His Thr 240

***Teredinibacter* - 42L**

721 CTT GAT GAG TTA AAC AAC TAT TTC ATT CCC CGC TAC ACC GGC TTC AAC TCA GTC TCC GAA 780
241 Leu Asp Glu Leu Asn Asn Tyr Phe Ile Pro Arg Tyr Thr Gly Phe Asn Ser Val Ser Glu 260
781 TAC TTC AAA AGT TAC ACG CTC ACC GGG CAG AAG CTC GCG TTT CTC AAC TGC CCC AGT TAC 840
261 Tyr Phe Lys Ser Tyr Thr Leu Thr Gly Gln Lys Leu Ala Phe Leu Asn Cys Pro Ser Tyr 280
841 ATT CTG GCA GCT GGC GAC GAC CCA ATA ATT CCA GCA TCC GAC TTT CAG AAA ATA GCC AAG 900
281 Ile Leu Ala Ala Gly Asp Asp Pro Ile Ile Pro Ala Ser Asp Phe Gln Lys Ile Ala Lys 300
901 CCT GCG AAT CTG CAC ATA ACA GTA ACG CAA CAA GGT TCT CAT TGC GCA TAC CTG GAA AAC 960
301 Pro Ala Asn Leu His Ile Thr Val Thr Gln Gln Gly Ser His Cys Ala Tyr Leu Glu Asn 320
961 CTG CAT AAA CCT AGT GCT GCC GAC AAA TAT GCG GTG AAA TTA TTT GGA GCC TGT TGA 1017
321 Leu His Lys Pro Ser Ala Ala Asp Lys Tyr Ala Val Lys Leu Phe Gly Ala Cys End 339

ATG CTT GAT ATG CCA ATC GAC CCT GTT TAC TAC CAG CTT GCT GAG TAT Met Leu Asp Met ⁵ Pro Ile Asp Pro Val ¹⁰ Tyr Tyr Gln Leu Ala Glu Tyr ¹⁵	TTC GAC AGT CTG CCG AAG TTC GAC CAG Gln Phe Ser ³⁰ TCC TCG GCC AGA Arg GAG Glu Tyr ¹⁵	AGG GAG GCG ATA AAT CGA ATA ²⁵ Tyr GAG Glu GAG Glu Arg ⁴⁵ AGA Arg Arg ⁶⁰ CAG Glu CAG Gln Leu Ser ³⁰	CAG CAT ³⁵ GAG AGG GTT GAA AGA GTT GAG Glu GAG Asp ⁶⁰ GAC Arg Thr ⁹⁰ ACG Ile AAG Lys GGG Gly Arg ¹⁵	AAC GGA GAC ATC AGA ⁵⁵ GTC Val ⁷⁰ GGT Gly ⁹⁰ TAC Tyr ⁷⁵ CAG Gln CAG Lys ⁸⁰ CCC Pro Asp ⁹⁵ TGC Cys AGC Ser ¹⁰⁰ TCC Ser ¹¹⁰ ACC Thr ¹²⁰ CCG Pro ¹³⁰ GAG Glu ¹⁴⁰	GGT CTG GTT Val ⁸⁵ TAC Tyr ¹⁰⁰ CAC His ¹¹⁰ GGT Gly ¹²⁰ GGA Gly ¹⁴⁰ ATT Ile ¹⁶⁰ CTT Leu ¹⁷⁵ TCA Ser ¹⁹⁰ AAC Asn ²⁰⁰ TCT Ser ²¹⁰ TTT Phe ²²⁰ CCC Pro ²³⁰ CCG Ala ²⁴⁰	TCG Ser ¹⁰⁰ CAC His ¹¹⁰ GAC GCG TTA TGC Cys ¹²⁰ AGG Arg ¹³⁵ AGA Arg ¹⁵⁰ GCG Ala ¹⁶⁵ GAG Glu ¹⁸⁰ CCA Val ¹⁹⁵ CAT Asp ²¹⁰ TGC Cys ²²⁵ TAC Tyr ²⁴⁰ GCG Ala ²⁵⁵ AAG Lys ²⁷⁰ GTT Val ²⁸⁵ GGT Gly ³⁰⁰ GAG Glu ³¹⁵ GGT Gly ³³⁰ GCG Ala ³⁴⁵ GAG Glu ³⁶⁰ GAG Glu ³⁷⁵ GAG Glu ³⁹⁰ GAG Glu ⁴⁰⁵ GAG Glu ⁴²⁰ GAG Glu ⁴³⁵ GAG Glu ⁴⁵⁰ GAG Glu ⁴⁶⁵ GAG Glu ⁴⁸⁰ GAG Glu ⁴⁹⁵ GAG Glu ⁵¹⁰ GAG Glu ⁵²⁵ GAG Glu ⁵⁴⁰ GAG Glu ⁵⁵⁵ GAG Glu ⁵⁷⁰ GAG Glu ⁵⁸⁵ GAG Glu ⁶⁰⁰ GAG Glu ⁶¹⁵ GAG Glu ⁶³⁰ GAG Glu ⁶⁴⁵ GAG Glu ⁶⁶⁰ GAG Glu ⁶⁷⁵ GAG Glu ⁶⁹⁰ GAG Glu ⁷⁰⁵ GAG Glu ⁷²⁰ GAG Glu ⁷³⁵ GAG Glu ⁷⁵⁰ GAG Glu ⁷⁶⁵ GAG Glu ⁷⁸⁰ GAG Glu ⁷⁹⁵ GAG Glu ⁸¹⁰ GAG Glu ⁸²⁵ GAG Glu ⁸⁴⁰ GAG Glu ⁸⁵⁵ GAG Glu ⁸⁷⁰ GAG Glu ⁸⁸⁵ GAG Glu ⁹⁰⁰ GAG Glu ⁹¹⁵ GAG Glu ⁹³⁰ GAG Glu ⁹⁴⁵ GAG Glu ⁹⁶⁰ GAG Glu ⁹⁷⁵ GAG Glu ⁹⁹⁰ GAG Glu ¹⁰⁰⁵ GAG Glu ¹⁰²⁰ GAG Glu ¹⁰³⁵ GAG Glu ¹⁰⁵⁰ GAG Glu ¹⁰⁶⁵ GAG Glu ¹⁰⁸⁰ GAG Glu ¹⁰⁹⁵ GAG Glu ¹¹¹⁰ GAG Glu ¹¹²⁵ GAG Glu ¹¹⁴⁰ GAG Glu ¹¹⁵⁵ GAG Glu ¹¹⁷⁰ GAG Glu ¹¹⁸⁵ GAG Glu ¹²⁰⁰ GAG Glu ¹²¹⁵ GAG Glu ¹²³⁰ GAG Glu ¹²⁴⁵ GAG Glu ¹²⁶⁰ GAG Glu ¹²⁷⁵ GAG Glu ¹²⁹⁰ GAG Glu ¹³⁰⁵ GAG Glu ¹³²⁰ GAG Glu ¹³³⁵ GAG Glu ¹³⁵⁰ GAG Glu ¹³⁶⁵ GAG Glu ¹³⁸⁰ GAG Glu ¹³⁹⁵ GAG Glu ¹⁴¹⁰ GAG Glu ¹⁴²⁵ GAG Glu ¹⁴⁴⁰ GAG Glu ¹⁴⁵⁵ GAG Glu ¹⁴⁷⁰ GAG Glu ¹⁴⁸⁵ GAG Glu ¹⁵⁰⁰ GAG Glu ¹⁵¹⁵ GAG Glu ¹⁵³⁰ GAG Glu ¹⁵⁴⁵ GAG Glu ¹⁵⁶⁰ GAG Glu ¹⁵⁷⁵ GAG Glu ¹⁵⁹⁰ GAG Glu ¹⁶⁰⁵ GAG Glu ¹⁶²⁰ GAG Glu ¹⁶³⁵ GAG Glu ¹⁶⁵⁰ GAG Glu ¹⁶⁶⁵ GAG Glu ¹⁶⁸⁰ GAG Glu ¹⁶⁹⁵ GAG Glu ¹⁷¹⁰ GAG Glu ¹⁷²⁵ GAG Glu ¹⁷⁴⁰ GAG Glu ¹⁷⁵⁵ GAG Glu ¹⁷⁷⁰ GAG Glu ¹⁷⁸⁵ GAG Glu ¹⁸⁰⁰ GAG Glu ¹⁸¹⁵ GAG Glu ¹⁸³⁰ GAG Glu ¹⁸⁴⁵ GAG Glu ¹⁸⁶⁰ GAG Glu ¹⁸⁷⁵ GAG Glu ¹⁸⁹⁰ GAG Glu ¹⁹⁰⁵ GAG Glu ¹⁹²⁰ GAG Glu ¹⁹³⁵ GAG Glu ¹⁹⁵⁰ GAG Glu ¹⁹⁶⁵ GAG Glu ¹⁹⁸⁰ GAG Glu ¹⁹⁹⁵ GAG Glu ²⁰¹⁰ GAG Glu ²⁰²⁵ GAG Glu ²⁰⁴⁰ GAG Glu ²⁰⁵⁵ GAG Glu ²⁰⁷⁰ GAG Glu ²⁰⁸⁵ GAG Glu ²¹⁰⁰ GAG Glu ²¹¹⁵ GAG Glu ²¹³⁰ GAG Glu ²¹⁴⁵ GAG Glu ²¹⁶⁰ GAG Glu ²¹⁷⁵ GAG Glu ²¹⁹⁰ GAG Glu ²²⁰⁵ GAG Glu ²²²⁰ GAG Glu ²²³⁵ GAG Glu ²²⁵⁰ GAG Glu ²²⁶⁵ GAG Glu ²²⁸⁰ GAG Glu ²²⁹⁵ GAG Glu ²³¹⁰ GAG Glu ²³²⁵ GAG Glu ²³⁴⁰ GAG Glu ²³⁵⁵ GAG Glu ²³⁷⁰ GAG Glu ²³⁸⁵ GAG Glu ²⁴⁰⁰ GAG Glu ²⁴¹⁵ GAG Glu ²⁴³⁰ GAG Glu ²⁴⁴⁵ GAG Glu ²⁴⁶⁰ GAG Glu ²⁴⁷⁵ GAG Glu ²⁴⁹⁰ GAG Glu ²⁵⁰⁵ GAG Glu ²⁵²⁰ GAG Glu ²⁵³⁵ GAG Glu ²⁵⁵⁰ GAG Glu ²⁵⁶⁵ GAG Glu ²⁵⁸⁰ GAG Glu ²⁵⁹⁵ GAG Glu ²⁶¹⁰ GAG Glu ²⁶²⁵ GAG Glu ²⁶⁴⁰ GAG Glu ²⁶⁵⁵ GAG Glu ²⁶⁷⁰ GAG Glu ²⁶⁸⁵ GAG Glu ²⁷⁰⁰ GAG Glu ²⁷¹⁵ GAG Glu ²⁷³⁰ GAG Glu ²⁷⁴⁵ GAG Glu ²⁷⁶⁰ GAG Glu ²⁷⁷⁵ GAG Glu ²⁷⁹⁰ GAG Glu ²⁸⁰⁵ GAG Glu ²⁸²⁰ GAG Glu ²⁸³⁵ GAG Glu ²⁸⁵⁰ GAG Glu ²⁸⁶⁵ GAG Glu ²⁸⁸⁰ GAG Glu ²⁸⁹⁵ GAG Glu ²⁹¹⁰ GAG Glu ²⁹²⁵ GAG Glu ²⁹⁴⁰ GAG Glu ²⁹⁵⁵ GAG Glu ²⁹⁷⁰ GAG Glu ²⁹⁸⁵ GAG Glu ³⁰⁰⁰ GAG Glu ³⁰¹⁵ GAG Glu ³⁰³⁰ GAG Glu ³⁰⁴⁵ GAG Glu ³⁰⁶⁰ GAG Glu ³⁰⁷⁵ GAG Glu ³⁰⁹⁰ GAG Glu ³¹⁰⁵ GAG Glu ³¹²⁰ GAG Glu ³¹³⁵ GAG Glu ³¹⁵⁰ GAG Glu ³¹⁶⁵ GAG Glu ³¹⁸⁰ GAG Glu ³¹⁹⁵ GAG Glu ³²¹⁰ GAG Glu ³²²⁵ GAG Glu ³²⁴⁰ GAG Glu ³²⁵⁵ GAG Glu ³²⁷⁰ GAG Glu ³²⁸⁵ GAG Glu ³³⁰⁰ GAG Glu ³³¹⁵ GAG Glu ³³³⁰ GAG Glu ³³⁴⁵ GAG Glu ³³⁶⁰ GAG Glu ³³⁷⁵ GAG Glu ³³⁹⁰ GAG Glu ³⁴⁰⁵ GAG Glu ³⁴²⁰ GAG Glu ³⁴³⁵ GAG Glu ³⁴⁵⁰ GAG Glu ³⁴⁶⁵ GAG Glu ³⁴⁸⁰ GAG Glu ³⁴⁹⁵ GAG Glu ³⁵¹⁰ GAG Glu ³⁵²⁵ GAG Glu ³⁵⁴⁰ GAG Glu ³⁵⁵⁵ GAG Glu ³⁵⁷⁰ GAG Glu ³⁵⁸⁵ GAG Glu ³⁶⁰⁰ GAG Glu ³⁶¹⁵ GAG Glu ³⁶³⁰ GAG Glu ³⁶⁴⁵ GAG Glu ³⁶⁶⁰ GAG Glu ³⁶⁷⁵ GAG Glu ³⁶⁹⁰ GAG Glu ³⁷⁰⁵ GAG Glu ³⁷²⁰ GAG Glu ³⁷³⁵ GAG Glu ³⁷⁵⁰ GAG Glu ³⁷⁶⁵ GAG Glu ³⁷⁸⁰ GAG Glu ³⁷⁹⁵ GAG Glu ³⁸¹⁰ GAG Glu ³⁸²⁵ GAG Glu ³⁸⁴⁰ GAG Glu ³⁸⁵⁵ GAG Glu ³⁸⁷⁰ GAG Glu ³⁸⁸⁵ GAG
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FIG. 14A
Sulfolobus Solfataricus P1 8LC1

ATG CCC CTA GAT CCT AGA ATT AAA AAG TTA CTA GAA TCA GCT CTT ACT	
Met Pro Leu Asp Pro Arg Ile Lys Lys Lys Leu Leu Glu Ser Ala Leu Thr	
1 CCA ATT GGT AAA GCC CCA GTA GAA GAG GTA AGA AAG ATA TTT AGG	
Ile Pro Ile Gly Lys Lys Ala Pro Val Glu Glu Val Arg Lys Ile Phe Arg	
20 TCG TCG GCA GCT CCC AAA GTC GAA GTT GGA AAA GAA GAT	
Gln Leu Ala Ser Ala Ala Pro Lys Val Glu Glu Val Lys Val Glu Asp	
35 ATA AAA ATA CCA GGC AGT GAA ACC GTT ATA AAC GCT AGA GTG TAT TTT	
Ile Lys Ile Pro Gly Ser Ser Glu Thr Val Ile Asn Ala Arg Val Tyr Phe	
50 AAG AGT AGC GGT CCT Pro Tyr GGT Val Val CTA Leu Val Tyr	
Pro Lys Ser Ser Gly Gly Gly Val Val TCT TAT Tyr Asp CCA Pro	
65 TTT Phe Val Ile ATA GGC GAT GTG GAA TCT TAT Tyr Asp CCA Pro	
Gly Phe Val Ile Ala Cys Asn AAT TGC Cys Val Val Val Val Val	
85 ATT ACA AAT GCG TGC AAT TGC Cys Val Val Val Val Val Val	
Ile Thr Asn Asn Ala Cys Asn AAT TGC Cys Val Val Val Val Val	
100 CCA GAA TAC AAG TTT CCT TCT GCA Ala Val Val Val Val Val	
Ala Pro Glu Tyr Tyr Lys Lys Phe Phe Ser Ala Val Val Val Val	
115 ACT AAT TGG GTT TAT AAT AAT TTA GAT AAA TTT Phe Phe Phe	
Thr Asn Trp Val Tyr Tyr Asn Asn Leu Asp Lys Lys Phe Phe Phe	
130 GCG ATT GCG GGA GAT AGT GCT GGA Gly Gly GGA AAT TTG GCA	
Val Ala Ile Ala Gly Asp Ser Ale Gly Gly Gly Ala Val Val	
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GCT CTT CTT TCA AAG GGT AAA ATT AAT TTG AAG TAT CAA ATA CTG GTT
Ala Leu Leu Ser Lys Gly Lys Ile Asn Leu Lys Tyr Gln Ile Leu Val
165 170 175

TAC CCA GCG GTA AGT TTA GAT AAC GTT TCA AGA TCC ATG ATA GAG TAC
Tyr Pro Ala Val Ser Leu Asp Asn Val Ser Arg Ser Met Ile Glu Tyr
180 185 190

TCT GAT GGG TTC TTT ACC AGA GAG CAT ATA GAG TGG TTC GGT TCT
Ser Asp Gly Phe Phe Leu Thr Arg Glu His Ile Glu Trp Phe Gly Ser
195 200 205

CAA TAC TTA CGA AGC CCT GCA GAT TTG CTA GAC TTT AGG TTC TCT CCA
Gln Tyr Leu Arg Ser Pro Ala Asp Leu Leu Asp Phe Arg Phe Ser Pro
210 215 220

ATT CTG GCG CAA GAT AAC GGA TTA CCT CCA GCC TTC ATA ATA ACA
Ile Leu Ala Gln Asp Phe Asn Gly Leu Leu Pro Pro Ala Leu Ile Ile Thr
225 230 235 240

GCA TAC GAT CCA GTA AGG GAT CAA GGA GAA GCG TAT GCA AAT AAA
Ala Glu Tyr Asp Pro Leu Arg Asp Gln Gln Gly Thr Val Ala Asn Lys
245 250 255

CTA CTA CAA GCT GGA GTC TCA GTT ACT AGT GTG AGA TTT AAC AAC GTT
Leu Leu Gln Ala Gly Val Ser Val Thr Ser Val Arg Phe Asn Asn Val
260 265 270 275

ATA CAC GGA TTC CTC TCA TTC Phe Phe CCG Pro TTG ATG GAG CAA GGA AGA GAT
Ile His Gly Phe Ser Ser Pro Leu Met Glu Gln Gly Arg Asp
280 285 290 295

GCT ATA GGT CTG ATA GGG TCT GTG TTA AGA CGA GTA TTT TAT GAT AAA
Ala Ile Gly Lru Ile Ile Gly Ser Val Leu Arg Arg Val Phe Tyr Asp Lys
300 305